

these vessels contained in the renal cavity is covered by the spongy body (Fig. S, iv) which constitutes the excretory epithelium of the kidneys.

The two anterior renal orifices are situated on both sides of the anus (to the left between this last and the genital opening, Fig. R, ix); they are sessile, but surrounded by a prominent cushion.

The reno-pericardial orifice is near the external renal opening; it is found more laterally than the latter (Fig. S, x) upon the ventral face of the renal cavity leading into a reno-pericardial tube (Fig. T, ii), applied to this latter, obliquely transverse, and directed latero-posteriorly, at the same time enlarging. By analogy with what exists in the other Dibranchiates, we would suppose that this tube is continuous with the visceropericardial cavity, but in the *Spirula reticulata* examined that could not be actually demonstrated, the dissection

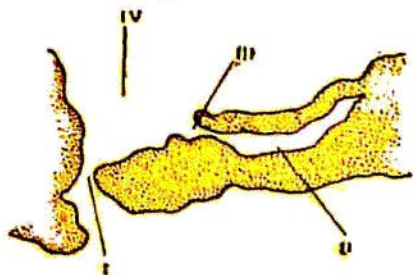


FIG. T.—Transverse section of the external renal aperture of *Spirula reticulata*;  $\times 40$ . i, external renal aperture; ii, reno-pericardial duct; iii, aperture of the reno-pericardial duct; iv, renal cavity.

having been already carried too far from other points of view.

## VI. REPRODUCTIVE SYSTEM.

1. *Sexes*.—The Challenger specimen, the "Blake" specimen and that from Professor Giard, were females, so that of the six individuals examined up to the present time from this point of view five were females (Blainville, Owen 1879, Challenger, "Blake," Giard) and only one male (Owen 1880). It is then very probable that in *Spirula* there is hyperpolygyny as in the other Cephalopods with non-autotomic hectocotyle.

2. *Ovary*.—The ovary occupies the greater part of the right half of the visceropericardial cavity (Pl. I. fig. 6; Pl. IV. fig. 1), and, in the *Spirula reticulata* examined, it even invades in part, in front of the shell and at the back of the heart, the left half of this cavity. It is attached at the postero-external (right) side of the stomach properly so-called or cardiac sac (Pl. VI. fig. 2), as in the Ommatostrephidæ for example.<sup>1</sup> It rises from the cœlomic wall (or "peritoneum") by a fold, which forms for it a peduncle and encloses the blood-vessels, upon which the ovary forms a sort of cluster (for the eggs, see further on: laying).

3. *Oviduct*.—The oviduct is situated to the left<sup>2</sup> and there occupies the greater part of the ventral region of the posterior half of the body in *Spirula peronii* (Pl. IV. fig. 3, *ov.*), as well as in *Spirula reticulata* (Fig. R, v). In the two specimens examined it was

<sup>1</sup> Contrary to what Owen says (*op. cit.*, p. 12), according to whom the ovary is to the left.

<sup>2</sup> And not at the right, as indicated in the *Traité de Zoologie* of Claus.